

WHAT IS CLAIMED IS:

1. A fan control system comprising:
 - 5 a sensor selection block having a first number of sensor inputs, each one of the first number of sensor inputs having a corresponding sensor parameter input, wherein the sensor selection block is operable to produce a second number of zone outputs with a corresponding second number of zone parameter outputs based on the first number of sensor inputs and corresponding first number of sensor parameter inputs; and
 - 10 an autofan block operable to receive the second number of zone outputs with the corresponding second number of zone parameter outputs as corresponding second number of zone inputs with corresponding second number of zone parameter inputs;
wherein the autofan block is further operable to generate one or more pulse width modulated (PWM) outputs that are calculated according to the second number of zone
 - 15 inputs and the second number of zone parameter inputs; and
wherein the first number is greater than the second number.
2. The fan control system of claim 1, wherein the autofan block is configured with a second number of pulse width modulated (PWM) outputs;
 - 20 wherein each respective one of the second number of zone inputs corresponds to a respective one of the second number of PWM outputs;
wherein each respective PWM output is calculated according to its corresponding respective zone input.
- 25 3. The fan control system of claim 1, wherein each one of the one or more PWM outputs is configured to control respective one or more fans.
4. The fan control system of claim 1, wherein the sensor inputs comprise temperature readings from various temperature sensors.

5. The fan control system of claim 1, wherein each sensor parameter input is configured to aid in specifying a PWM signal duty cycle value corresponding to the sensor parameter input's respective corresponding sensor input.

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6. The fan control system of claim 1, wherein the sensor selection block is operable to select the second number of zone outputs according to a selection control scheme configured in the fan control system.

10 7. The fan control system of claim 1, wherein each one of the first number of sensor inputs corresponds to at least one respective temperature zone in a computer system.

8. A system comprising:
15 a plurality of fans disposed in the system for maintaining a predetermined temperature in corresponding zones of the system;

one or more pulse width modulated (PWM) signal generators, each PWM signal generator configured to provide a corresponding PWM signal to respective one or more fans of the plurality of fans such that the predetermined temperature in one or more zones
20 corresponding to the respective one or more fans is substantially maintained;

a number of sensors positioned throughout the system, each sensor having parameters associated therewith to assist in forming PWM signals;

a fan control block having a number of sensor inputs, each sensor input having a respective sensor mapped to it;

25 wherein the fan control block is operable to calculate a duty cycle value for each corresponding PWM signal based on input data received from the sensors; and

wherein the number of sensors is greater than the number of sensor inputs.

9. The system of claim 8, wherein each sensor is configured to monitor a respective zone of the system.

10. The system of claim 8, wherein the fan control block is configured to have
5 a respective set of sensors mapped to the sensor inputs for each corresponding PWM signal.

11. The system of claim 10, wherein in having the respective set of sensors mapped to the sensor inputs, the mapping is determined by a finite state machine
10 configured in the fan control block.

12. A method for generating PWM signals in a system using a fan controller having a number of zone inputs, the method comprising:

mapping a subset of a number of sensor inputs across the fan controller, wherein
15 said mapping the subset of the number of sensor inputs comprises assigning each zone input at least one sensor input of the subset of the number of sensor inputs; and

generating a PWM signal in accordance with data received from the subset of the number of sensor inputs mapped across the fan controller;

wherein the number of zone inputs is less than the number of sensor inputs.

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13. The method of claim 12 further comprising:

generating two or more additional PWM signals; and

for each respective one of the two or more additional PWM signals:

mapping a corresponding subset of the number of sensor inputs across the
25 fan controller, wherein said mapping the corresponding subset of the number of sensor inputs comprises assigning each zone input at least one sensor input of the corresponding subset of the number of sensor inputs; and

generating the respective one of the two or more additional PWM signals in accordance with data received from the corresponding subset of the number of sensor inputs.

5 14. The method of claim 12, wherein said assigning each zone input at least one sensor input of the subset of the number of sensor inputs comprises:

 assigning each zone input at least one sensor input of the subset of the number of sensor inputs based on a control scheme configured in the fan controller.

10 15. The method of claim 14, wherein the control scheme is implemented in a finite state machine.

 16. A PWM signal generator in a computer system for generating PWM signals to be used for cooling zones of the computer system comprising:

15 configuration registers configured to store information regarding the zones of the computer system, the configuration register information being used for calculating PWM signals;

 at least three sensor inputs for the PWM signal generator;

 at least six temperature sensors in the computer system, three or less of the at least
20 six temperature sensors being mapped to the at least three sensor inputs for the PWM signal generator; and

 at least one fan disposed in the computer system, the at least one fan being electrically coupled to the PWM signal generator such that a PWM signal may be sent to the fan according to the at least six temperature sensor mapping.

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 17. The PWM signal generator of claim 16 further comprising a fan control unit electrically coupled to the PWM signal generator such that the PWM signals may be generated according to directions from the fan control unit.

18. An autofan block for controlling one or more fans disposed in a system, a plurality of PWM signal generators also disposed in the system, each respective one of the one or more fans operable to maintain a predetermined temperature in a corresponding zone of the system, each respective one of the one or more fans being
5 powered by a respective PWM signal provided by a corresponding one of the plurality of PWM signal generators such that the predetermined temperature is substantially maintained in each corresponding zone of the system, and a number of sensors positioned throughout the system with each sensor having parameters associated therewith to assist in forming PWM signals, the autofan block comprising:
10 a number of sensor inputs, each sensor input having a respective sensor mapped to it;
wherein the autofan block is operable to calculate a duty cycle value for each one of the plurality of PWM signal generators based on input data received from the sensors;
and
15 wherein the number of sensors is greater than the number of sensor inputs.